

Appendix A. Summary of Case Study Results

SITE	Treatment Type	Depth of Water (feet BGS)	Lithology		Targeted Contaminant	Groundwater Concentration (µg/L)	Number of Extraction Wells	Depth of Extraction Well (feet BGS)	Effective Well Vacuum (in. of Hg)	Screened Interval (feet BGS)	Initial Total Mass of VOCs Removed (lbs/day)		Groundwater Flow rate (GPM)		Vapor Flow rate (scfm)	Estimated Cost of Contaminant Extraction (\$/lb)	Remarks
			Vadose Zone	Saturated Zone							MPE	P&T	MPE	P & T			
DDRW-Tracy OU1	TPE	24.0	silty clay	silty clay	TCE	3.5-6.5	1	31	18	15.5-30.5	2.5 x 10 ⁻³	8.7 x 10 ⁻⁵	3.5	0.5	13-17	38,000	a
Travis AFB, MW-269	TPE	13.7	silts, clays	silts, clays	TCE	1,030	1	22.5	19-22	11.7-21.7	0.113	0.008	3.72	0.8	6-10	848	
Travis AFB, Ragsdale & V, MW-7	TPE	10.0	silts, clays	silts, clays	TCE, TPH, Benzene	3,700	1	29	17	8.5-28.5	24	0.29	5	2	17	4	
Travis AFB, OSA	TPE	8.0	silty clay	silty clay	TCE, PCE	900	1	29	22.5	8-28	0.875	0.11	0.5	<0.25	3.5-5	110	
Nellis AFB, Site 44	TPE	45.0	silty clay	caliche, silty clay	TCE (VOCs)	1,760	1	60	6.5	30-60	0.39	0.012	1.7	0.8	87-97	351	b
McClellan AFB, Bld.666	TPE	109.0	sandy silt	sandy silt	TCE, PCE, Freon	8,400	1	124.5	20	105.5-124.5	9	0.36	5.2	4	94	58	c
FE Warren AFB, OU2, EW1	TPE	10.0	clayey, gravely, silty, sands	clayey sands and clay	TCE	0-150	1	25	9-13	12.7-24.7	0.029	0.011	2.7-3.0	2-3	2-4	3,300	
Ellsworth AFB OU-11, BG-04	TPE	18	sandy silty clay, clayey sand	clayey gravel, pierre shale	TCE	40.5	1	33	9-14	13-23	0.003	0.001	2-3	<2 gpm (estimated)	15-30	32,000	a
Offutt AFB, Bld. 301	LVDPE	50.0	clay	silty sand	TCE	24,600	1	92	9-14.5	50-70	0.7	0.33	3.1	1.5	9-14.5	137	d
McClellan AFB, Bld. 360, EW - 321	LVDPE	112.0	clays, silts	sandy silts, silty sand	TCE (VOCs)	10,500	1	160	10	110-140	11.4	0.28	5.9	2.75	58	245	e
	HVDPE	112.0	clays, silts	sandy silts, silty sand	TCE (VOCs)	10,500	1	160	15	110-140	13.6	0.28	6.7	2.75	78	225	e
McClellan AFB, Bld. 360, MW-224	LVDPE	112.5	sandy silt	sandy silt	TCE (VOCs)	11,000	1	119.5	10	110-140	0.68	0.08	1.6	0.6	4.5	1,700	f
	HVDPE	112.5	sandy silt	sandy silt	TCE (VOCs)	11,000	1	119.5	24	109.5-119.5	2.54	0.08	1.8	0.6	11	1,290	f
Air Force Plant - 44, IRP Site 3,	LVDPE	132.0	interbedded sandy gravel & sandy clay	interbedded sandy gravel & sandy clay	TCE, DCE, TCA, Freon 113	190-510	1	175	6.5	42-184	177	0.21	58	47	231	3	
Air Force Plant - 44, IRP Site 2,	LVDPE	145.0	interbedded sandy gravel & sandy clay	interbedded sandy gravel & sandy clay	TCE	240-2,100	1	250	6	120-245	735	1.55	112	110	181	<1	
Air Force Plant - 44, IRP Site 5	LVDPE	118.0	interbedded sand	interbedded sand	TCE, DCE	25-58	1	180	6	120-150	23.5	0.032	69	64	220	12	

Remarks:

- a. High contaminant removal costs are due to low groundwater concentrations.
 - b. Test results indicate that LVDPE would be more effective than TPE at this site.
 - c. Test results indicate that HVDPE would be more effective than TPE at this site.
 - d. Test results indicate that HVDPE would be more effective than LVDPE at this site.
 - e. HVDPE and LVDPE shown to be nearly equally cost effective for EW-321 at McClellan
 - f. HVDPE shown to be most cost effective for MW-224 at McClellan.
- N/A = Not applicable

Note: Costs associated with any patent requirements are not included in the cost.